UNITED STATES DEPARTMENT OF AGRICULTURE
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Bureau of Entomology and Plant Quarantine
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WINTER MORTALITY OF THE BLACK HILLS BEETLE IN THE DENVER MOUNTAIN PARKS AREA AND ADJACENT NATIONAL FORESTS

From April 4 to 6 examinations were made of the Black Hills beetle in ponderosa pine in the vicinity of Evergreen and Bailey, Colorado. Cold temperatures in November, January and February were low enough to suspect some mortality.

Temperature Records - Degrees Fahrenheit

Location		November 8	9	10	February 1
Bailey	Max	45	15	37	Min -54
	Min	11	0	-26	
Cheesman	Max	56	17	45	
	Min	17	8	-10	
Idaho Springs	Max	58	16	33	
	Min	14	-2	-21	
Evergreen					Min -32

Beetle mortality in the Evergreen area in the vicinity of the Evan's Ranch, T.5 S., R. 72 W., averaged 72.16 percent. This average is based on the data taken from 23 6-inch square samples from 12 trees. All samples were taken at from 3½ to 4½ feet above the ground. The foliage on 9 of the 12 trees examined had faded slightly. This fading was sufficient to be detected from a distance of just under 100 yards.

Mortality was quite variable, ranging from 29 to 100 percent; only 4 trees showing 100 percent mortality. With the exception of 1 tree, the larvae found alive were tiny, having reached the size of normal larvae that are 2 weeks old.

The dead larvae were black and in most cases completely desiccated. This advanced stage of desiccation would seem more likely associated with larval kill in November.

Grouping of infested trees in the vicinity of past infestations is still noticeable in the Evergreen area. One group of 4 trees and another group of 3 trees were found. However, the numbers of living larvae in these trees are so small that similar grouping from the 1951 flight does not seem possible. As a result of the mortality attributed to cold temperatures, artificial control of Black Hills beetles in the Evergreen area and on the Arapaho National Forest is not recommended in 1951.

Larval mortality in the Bailey, Colorado area of the Pike National Forest and nearby private lands averaged 96.37 percent 2 feet above the ground and higher, and 63.43 percent below the 2-feet mark. The average of 96.37 percent is based on data obtained from 21 6-inch square samples taken from 11 trees at widely separated points. Of the 21 samples, 18 showed 100 percent mortality, 1 showed 80 percent, and 2 showed 70 percent. There was very little variation in percent mortality within the 6 samples taken below 2 feet. The foliage on 8 of the 11 trees examined had faded slightly at the time examinations were made--April 6.

The larvae in the Bailey area had completed half of their development when mortality took place. Once again, the dead larvae were black and completely desiccated.

Infested trees are still found in small groups but living broods are relatively light and little grouping is expected from the 1951 flight.

As a result of the high mortality attributed to cold temperatures, artificial control on the Pike National Forest and surrounding private lands is not recommended in 1951.

Submitted by

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